WHAT IS CLAIMED IS:

1. An apparatus for processing a digital audio signal having a sequence of samples, the apparatus comprising:

first means for detecting maximal values and minimal values represented by samples of the digital audio signal;

second means for detecting a number of samples from a sample representing a minimal value detected by the first means to a maximal-value-corresponding sample representing a maximal value detected by the first means;

third means for detecting a number of samples from a sample representing a maximal value detected by the first means to a minimal-value-corresponding sample representing a minimal value detected by the first means;

fourth means for calculating a first difference between the maximal value represented by the maximal-value-corresponding sample and a value represented by a sample immediately preceding the maximal-value-corresponding sample;

fifth means for calculating a second difference between the minimal value represented by the minimal-value-corresponding sample and a value represented by a sample immediately preceding the minimal-value-corresponding sample;

sixth means for calculating a first coefficient from the sample number detected by the second means;

seventh means for calculating a second coefficient from the sample number detected by the third means;

eighth means for multiplying the first coefficient and the first difference to generate a first multiplication result;

ninth means for multiplying the second coefficient and the second difference to generate a second multiplication result;

tenth means for incrementing the maximal value, represented by the maximal-value-corresponding sample, by the first multiplication result to modify the maximal-value-corresponding sample; and

eleventh means for decrementing the minimal value, represented by the minimal-value-corresponding sample, by the second multiplication result to modify the minimal-value-corresponding sample.

2. An apparatus as recited in claim 1, further comprising:

twelfth means for calculating a third coefficient from the sample number detected by the second means;

thirteenth means for calculating a fourth coefficient from the sample number detected by the third means;

fourteenth means for multiplying the third coefficient and the first difference to generate a third multiplication result;

fifteenth means for multiplying the fourth coefficient and the second difference to generate a fourth multiplication result;

sixteenth means for incrementing a value of a sample near the maximal-value-corresponding sample by the third multiplication result to modify the sample near the maximal-value-corresponding sample; and

seventeenth means for decrementing a value of a sample near the minimal-value-corresponding sample by the fourth multiplication result to modify the sample near the minimal-value-corresponding sample.

3. An apparatus as recited in claim 1, wherein the first coefficient increases as the sample number detected by the second means decreases, and the second coefficient increases as the sample number detected by the third means decreases.

4. A recording medium storing a computer program for processing a digital audio signal having a sequence of samples, the computer program comprising the steps of:

(1) detecting maximal values and minimal values represented by samples of the digital audio signal;

(2) detecting a number of samples from a sample representing a minimal value detected by the step (1) to a maximal-value-corresponding sample representing a maximal value detected by the step (1);

(3) detecting a number of samples from a sample representing a maximal value detected by the step (1) to a minimal-value-corresponding sample representing a minimal value detected by the step (1);

(4) calculating a first difference between the maximal value represented by the maximal-value-corresponding sample and a value represented by a sample immediately preceding the maximal-value-

corresponding sample;

(5) calculating a second difference between the minimal value represented by the minimal-value-corresponding sample and a value represented by a sample immediately preceding the minimal-value-corresponding sample;

(6) calculating a first coefficient from the sample number detected by the step (2);

(7) calculating a second coefficient from the sample number detected by the step (3);

(8) multiplying the first coefficient and the first difference to generate a first multiplication result;

(9) multiplying the second coefficient and the second difference to generate a second multiplication result;

(10) incrementing the maximal value, represented by the maximal-value-corresponding sample, by the first multiplication result to modify the maximal-value-corresponding sample; and

(11) decrementing the minimal value, represented by the minimal-value-corresponding sample, by the second multiplication result to modify the minimal-value-corresponding sample.

5. A recording medium as recited in claim 4, wherein the computer program further comprises the steps of:

(12) calculating a third coefficient from the sample number detected by the step (2);

(13) calculating a fourth coefficient from the sample number detected by the step (3);

(14) multiplying the third coefficient and the first difference to generate a third multiplication result;

(15) multiplying the fourth coefficient and the second difference to generate a fourth multiplication result;

(16) incrementing a value of a sample near the maximal-value-corresponding sample by the third multiplication result to modify the sample near the maximal-value-corresponding sample; and

(17) decrementing a value of a sample near the minimal-value-corresponding sample by the fourth multiplication result to modify the sample near the minimal-value-corresponding sample.

6. A recording medium as recited in claim 4, wherein the first coefficient increases as the sample number detected by the step (2) decreases, and the second coefficient increases as the sample number detected by the step (3) decreases.

7. An apparatus for processing a digital audio signal having a sequence of samples, the apparatus comprising:

first means for detecting first and second specific samples among the samples of the digital audio signal, the first and second specific samples corresponding to temporally-adjacent extremes in signal level represented by the sequence of the samples, the extremes including a maximal value and a minimal value;

second means for detecting a number of samples of the digital audio signal between the first and second specific samples;

third means for calculating a difference between a value

represented by the second specific sample and a sample of the digital audio signal which immediately precedes the second specific sample; and

fourth means for modifying the second specific sample in response to the number detected by the second means and in response to the difference calculated by the third means.

8. A method of processing a digital audio signal having a sequence of samples, the method comprising the steps of:

(1) detecting first and second specific samples among the samples of the digital audio signal, the first and second specific samples corresponding to temporally-adjacent extremes in signal level represented by the sequence of the samples, the extremes including a maximal value and a minimal value;

(2) detecting a number of samples of the digital audio signal between the first and second specific samples;

(3) calculating a difference between a value represented by the second specific sample and a sample of the digital audio signal which immediately precedes the second specific sample; and

(4) modifying the second specific sample in response to the number detected by the step (2) and in response to the difference calculated by the step (3).

9. A method of processing a digital audio signal having a sequence of samples, the method comprising the steps of:

(1) detecting maximal values and minimal values represented

by samples of the digital audio signal;

(2) detecting a number of samples from a sample representing a minimal value detected by the step (1) to a maximal-value-corresponding sample representing a maximal value detected by the step (1);

(3) detecting a number of samples from a sample representing a maximal value detected by the step (1) to a minimal-value-corresponding sample representing a minimal value detected by the step (1);

(4) calculating a first difference between the maximal value represented by the maximal-value-corresponding sample and a value represented by a sample immediately preceding the maximal-value-corresponding sample;

(5) calculating a second difference between the minimal value represented by the minimal-value-corresponding sample and a value represented by a sample immediately preceding the minimal-value-corresponding sample;

(6) calculating a first coefficient from the sample number detected by the step (2);

(7) calculating a second coefficient from the sample number detected by the step (3);

(8) multiplying the first coefficient and the first difference to generate a first multiplication result;

(9) multiplying the second coefficient and the second difference to generate a second multiplication result;

(10) incrementing the maximal value, represented by the

maximal-value-corresponding sample, by the first multiplication result to modify the maximal-value-corresponding sample; and

(11) decrementing the minimal value, represented by the minimal-value-corresponding sample, by the second multiplication result to modify the minimal-value-corresponding sample.

10. A method as recited in claim 9, further comprising the steps of:

(12) calculating a third coefficient from the sample number detected by the step (2);

(13) calculating a fourth coefficient from the sample number detected by the step (3);

(14) multiplying the third coefficient and the first difference to generate a third multiplication result;

(15) multiplying the fourth coefficient and the second difference to generate a fourth multiplication result;

(16) incrementing a value of a sample near the maximal-value-corresponding sample by the third multiplication result to modify the sample near the maximal-value-corresponding sample; and

(17) decrementing a value of a sample near the minimal-value-corresponding sample by the fourth multiplication result to modify the sample near the minimal-value-corresponding sample.

11. A method as recited in claim 9, wherein the first coefficient increases as the sample number detected by the step (2) decreases, and the second coefficient increases as the sample number detected

by the step (3) decreases.

12. A recording medium storing a computer program for processing a digital audio signal having a sequence of samples, the computer program comprising the steps of:

(1) detecting first and second specific samples among the samples of the digital audio signal, the first and second specific samples corresponding to temporally-adjacent extremes in signal level represented by the sequence of the samples, the extremes including a maximal value and a minimal value;

(2) detecting a number of samples of the digital audio signal between the first and second specific samples;

(3) calculating a difference between a value represented by the second specific sample and a sample of the digital audio signal which immediately precedes the second specific sample; and

(4) modifying the second specific sample in response to the number detected by the step (2) and in response to the difference calculated by the step (3).